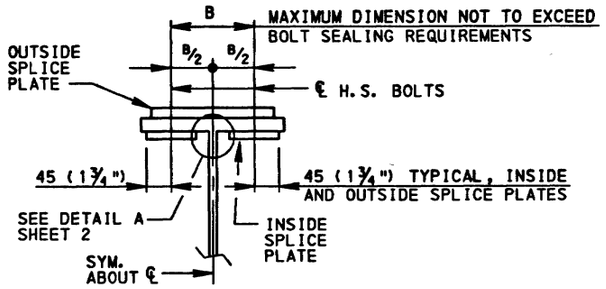
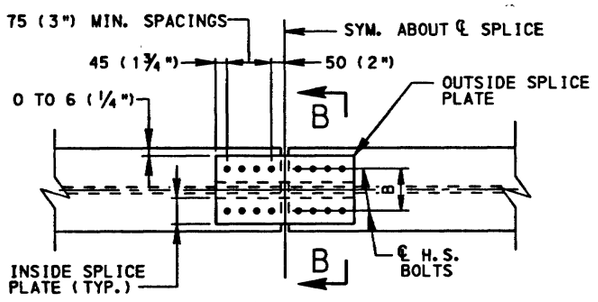
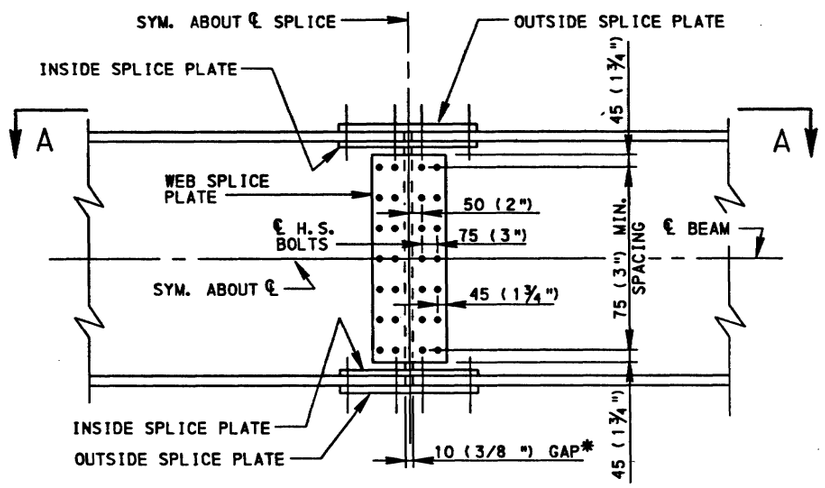


SECTION B-B



VIEW A-A

FLANGE SPLICE DETAIL - TYPE 1



WEB SPLICE DETAIL

* USE 10 (3/8") GAP FOR DESIGN, DETAIL AS 6 (1/4") GAP ON DRAWINGS.

GENERAL NOTES

1. ALL DIMENSIONS GIVEN IN MILLIMETERS UNLESS OTHERWISE NOTED. U.S. CUSTOMARY UNITS IN () PARENTHESES.
2. DESIGN SPECIFICATIONS: 1998 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AS SUPPLEMENTED BY DM-4.
3. DETAILS SHOWN ARE FOR 22.2 (7/8") DIAMETER HIGH STRENGTH BOLTS.
4. BOLT SPACINGS SHOWN ARE PREFERRED MINIMUMS.
5. EDGE DISTANCES SHOWN ARE MINIMUMS BASED ON SHEARED OR GAS CUT EDGES PLUS AN ADDITIONAL 7 (1/4") CLEARANCE IN ACCORDANCE WITH STRUCTURAL COMMITTEE FOR ECONOMICAL FABRICATION DETAIL. THIS WILL PROVIDE A TOLERANCE FOR PUNCHING, DRILLING AND REAMING.
6. FOR THE MINIMUM EDGE DISTANCES, THE BEARING CAPACITY OF THE WEB PLATE, ESPECIALLY THIN WEB PLATES, MAY BE SIGNIFICANTLY LESS THAN THE BOLT SHEAR CAPACITY RESULTING IN THE PLATE BEARING CAPACITY CONTROLLING THE DESIGN. THE DESIGNER SHOULD ADJUST THE WEB EDGE DISTANCES, INCREASING THE PLATE BEARING CAPACITY, TO MINIMIZE THE NUMBER OF GAGE LINES OF WEB BOLTS. THE DESIGNER SHOULD INCREASE THE WEB EDGE DISTANCE TO OBTAIN A DESIGN WITH THE TYPICAL 2 OR 3 ROWS OF WEB SPLICE BOLTS.
7. DESIGNER TO VERIFY INSTALLATION CLEARANCES AS ILLUSTRATED IN AISC MANUAL OF STEEL CONSTRUCTION.
8. DESIGNER TO INDICATE WHETHER OR NOT THE BOLTS ARE DESIGNED FOR THREADS EXCLUDED FROM SHEAR PLANE.
9. CAPACITY OF COMPONENT SPLICE PLATE TO EQUAL CAPACITY OF COMPONENT. COMPONENT BEING TOP FLANGE, WEB OR BOTTOM FLANGE.
10. CHECK GIRDER CAPACITY FOR REDUCTION DUE TO BOLTS HOLES IN THE TENSION FLANGE USING THE EFFECTIVE NET AREA, A_e, IN ACCORDANCE WITH THE FOLLOWING:

    $A_e = A_n + \beta A_g \leq A_g$

    $\beta = \left(\frac{A_n}{A_g}\right)\left[\left(\frac{\phi_u F_u}{\phi_y F_{yf}}\right) - 1\right] > 0.0$ FOR BOLT HOLES LESS THAN 31.8 (1¼") IN DIAMETER

    A_n = NET AREA OF FLANGE, mm² (in²)

    A_g = GROSS AREA OF FLANGE, mm² (in²)

    ϕ_u = 0.80

    ϕ_y = 0.95

    F_u = SPECIFIED MINIMUM TENSILE STRENGTH OF THE FLANGE, MPa (ksi)

    F_{yf} = SPECIFIED MINIMUM YIELD STRENGTH OF THE FLANGE, MPa (ksi)

    THIS GIRDER CAPACITY CHECK IS CRITICAL FOR SINGLE SPAN STRUCTURES AND CONTINUOUS STRUCTURES WITH SPLICES IN HIGH MOMENT REGIONS.

    IN CASES THAT A SIGNIFICANT REDUCTION IN FLANGE CAPACITY OCCURS DUE TO EFFECTIVE AREA, CONSIDER A STAGGERED BOLT PATTERN.
11. THE EFFECTIVE COMPRESSION FLANGE AREA SHALL BE TAKEN EQUAL TO THE GROSS AREA OF THE COMPRESSION FLANGE.
12. DESIGNER TO VERFY THAT BOLT SPACINGS FOR FLANGE SPLICES AND WEB SPLICES DO NOT EXCEED BOLT SEALING REQUIREMENTS

NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

STANDARD

FIELD SPLICE

RECOMMENDED 7/11/01 CHIEF BRIDGE ENGINEER	RECOMMENDED 7/11/01 DIR., BUREAU OF DESIGN	RECOMMENDED 7/11/01 CHIEF ENG., HWY. ADMIN.	SHT. 1 OF 2
			BD-616M